ELSEVIER

Volume 137, Issues 1–3, 30 June 2003

Journal of
Materials
Processing
Technology

www.elsevier.com/locate/jmatprotec

Contents

Microstructure and mechanical properties of stainless steel produced by centrifugal-SHS process 1
W. Xi, S. Yin, H. Lai

Formation mechanism of the pressure zone at the tip of the melt delivery tube during the spray forming process 5
C. Cui, F. Cao, Q. Li

Fabrication of composite pipes by multi-billet extrusion technique 10
Z. Chen, K. Ikeda, T. Murakami, T. Takeda, J.-X. Xie

Superplastic properties of Inconel 718 17
H. Xue, W. Lijun, X. Hui, L. Runguang, W. Shaogang, C. Zhonglin

Extrusion moulding of hard-metal powder using a novel binder system 21
J. Zhou, B. Huang, E. Wu

Preparation of ultrafine MnO_2 powders by the solid state method reaction of $KMnO_4$ with Mn(II) salts at room temperature 25
Q. Li, G. Luo, J. Li, X. Xia

Composites fabricated by self-propagating high-temperature synthesis. 30
Z.Y. Fu, H. Wang, W.M. Wang, R.Z. Yuan

An investigation on fine-grain formation and structural character in cast IN718 superalloy 35
Y. Ma, J. Sun, X. Xie, Y. Hu, J. Zhao, P. Yan

Preparation of modified ultra-fine mineral powder and interaction between mineral filler and silicone rubber 40
J. Wu, J. Huang, N. Chen, C. Wei, Y. Chen

Synthesis and photocatalytic properties of fibrous titania by solvothermal reactions 45
S. Yin, Y. Fujishiro, J. Wu, M. Aki, T. Sato

Solid free-forming of ceramics using a continuous jet printer. 49
P. Blazdell

Study of fine silver powder from AgOH slurry by hydrothermal techniques. 55
R. Li, D.J. Kim, K. Yu, H. Liang, C. Bai, S. Li

A high strength and high conductivity copper alloy prepared by spray forming 60
Z. Li, J. Shen, F. Cao, Q. Li

Thermal debinding processing of 316L stainless steel powder injection molding compacts 65
Y. Li, S. Liu, X. Qu, B. Huang

A new type of binder for metal injection molding 70
S. Li, B. Huang, Y. Li, X. Qu, S. Liu, J. Fan

Element modeling of FEM on the pressure field in the powder injection mold filling process 74
B.-y. Jiang, J. Zhong, B.-y. Huang, X.-h. Qu, Y.-m. Li

The publisher encourages the submission of articles in electronic form thus saving time and avoiding rekeying errors. A leaflet describing our requirements is available from the publisher upon request.

CONTENTS Direct

This journal is part of **ContentsDirect**, the ***free*** alerting service which sends tables of contents by e-mail for Elsevier Science books and journals. You can register for **ContentsDirect** online at: **http://contentsdirect.elsevier.com**

Elsevier Science B.V.

Microstructures and photoluminescence of barium titanate nanocrystals synthesized by the hydrothermal process 78
M.-S. Zhang, J. Yu, J. Chu, Q. Chen, W. Chen

Preparation of indium tin oxide (ITO) with a single-phase structure 82
S. Tang, J. Yao, J. Chen, J. Luo

Single roll method for foil casting of the aluminum alloy 86
T. Haga, S. Suzuki

Melt ejection twin roll caster for the strip casting of aluminum alloy 92
T. Haga, S. Suzuki

The engineering application of the electroplastic effect in the cold-drawing of stainless steel wire 96
G. Tang, J. Zhang, Y. Yan, H. Zhou, W. Fang

The orientational growth of grains in doped $BaTiO_3$ PTCR materials by microwave sintering 100
A. Chang, J. Jian

Influence of temperature on the colloidal processing of electrostatically stabilised alumina suspensions 102
G. Tarì, S.M. Olhero, J.M.F. Ferreira

An advanced model for plasma spraying of functionally graded materials 110
Y.P. Wan, S. Sampath, V. Prasad, R. Williamson, J.R. Fincke

Sandwich rolling of sintered compacts of pure chromium 117
Y. Harada, M. Ohmori

Preparation of fine particles of tin–M (M: silver, bismuth) alloys with ammonia splashing method. 123
S. Yokoyama, A. Momota, K. Hirao, M. Kawakami, Y. Murata

Preparation and evaluation of Al_2O_3 plastic forming feedstock with partially water soluble polymer as a binder 128
S. Liang, B. Huang, Z.A. Ahmad, A.F. Mohd Noor, K. Hussin

The rheology of metal injection molding 132
B. Huang, S. Liang, X. Qu

Computer-aided die design for axis-symmetric cold forging products by feature elimination 138
T. Ohashi, S. Imamura, T. Shimizu, M. Motomura

Research on the non-linear temperature field of molten metal shaped by an electromagnetic field in DS processing. 145
J. Li, Q. Hao, S. Li, H. Kou, J. Li, H. Fu

Flexible punching method using an elastic tool instead of a metal punch 151
H. Watari, H. Ona, Y. Yoshida

Research on the technology and the mechanical properties of the microwave processing of polymer 156
J. Zhou, C. Shi, B. Mei, R. Yuan, Z. Fu

Research on press joining technology for automotive metallic sheets 159
N. Nong, O. Keju, Z. Yu, Q. Zhiyuan, T. Changcheng, L. Feipeng

Microstructure and mechanical properties of spray-formed Al–Si–Pb alloys. 164
F. Yu, D.S. Dwarakadasa, S. Ranganathan

Research on microstructure and properties of aluminum-matrix composite fabricated by spray deposition. 168
S. Zhang, Y. Chen, Q. Li

Grain refinement of a Nb–Ti microalloyed steel through heavy deformation controlled cooling 173
H. Hou, Q. Chen, Q. Liu, H. Dong

The rheological and sintering behavior of W–Ni–Fe nano-structured crystalline powder 177
B. Huang, J. Fan, S. Liang, X. Qu

The study of primary Si phase in spray forming hypereutectic Al–Si alloy 183
X. Baiqing, Z. Yongan, W. Qiang, S. Likai, X. Changan, S. Chengjia, H. Xinlai

TiC particulate-reinforced Al–20Si–5Fe composite fabricated by melt in situ reaction spray forming 187
B. Yang, F. Wang, H. Cui, X.J. Duan, S.C. Hu, J.S. Zhang

The microstructure and mechanical properties of spray-deposited hypereutectic Al–Si–Fe alloy 191
F. Wang, B. Yang, X.J. Duan, B.Q. Xiong, J.S. Zhang

The formation of rosette α phase, structural evolution during the reheating and semi-solid casting of AlSi7Mg alloy 195
Y. Zhang, K. Zhang, G. Liu, J. Xu, L. Shi, D. Cui, X. Wu, B. Cui

A new electrolytic method of preparing ultrafine metallic powders. 201
H. Feng, Z. Zhengyi, X. Yaofu, W. Wuxiang, H. Yafang, W. Run

Research on the dual-frequency electromagnetic shaping of liquid metal. 204
S. Li, J. Li, Q. Hao, H. Kou, J. Li, H. Fu

Viscoelasticity and flow behavior of irradiation grafted nano-inorganic particle filled polypropylene composites in the melt state 208
V.P. Privalko, V.F. Shumsky, E.G. Privalko, V.M. Karaman, R. Walter, K. Friedrich, M.Q. Zhang, M.Z. Rong

Effect of a cylindrical shroud on particle conditions in high velocity oxy-fuel (HVOF) spray process 214
A. Dolatabadi, J. Mostaghimi, V. Pershin

Author Index 225
Subject Index 227